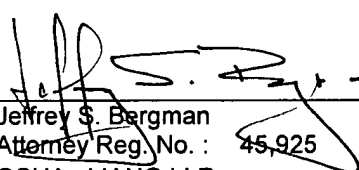




TRANSMITTAL OF APPEAL BRIEF			Docket No. 05516/089003
In re Application of: Carl M. Hoffmaster et al.			
Application No. 10/774,134-Conf. #8389	Filing Date February 6, 2004	Examiner H. C. Dang	Group Art Unit 3672
Invention: ADVANCED EXPANDABLE REAMING TOOL			
<p style="text-align: center;"><b><u>TO THE COMMISSIONER OF PATENTS:</u></b></p> <p>Transmitted herewith is the Reply Brief in this application, with respect to the Notice of Appeal filed: <u>August 17, 2005</u> .</p> <p>The fee for filing this Reply Brief is <u>\$ 0.00</u> .</p> <p><input checked="" type="checkbox"/> Large Entity      <input type="checkbox"/> Small Entity</p> <p><input type="checkbox"/> A petition for extension of time is also enclosed.</p> <p>The fee for the extension of time is _____ .</p> <p><input type="checkbox"/> A check in the amount of _____ is enclosed.</p> <p><input type="checkbox"/> Charge the amount of the fee to Deposit Account No. <u>50-0591</u> . This sheet is submitted in duplicate.</p> <p><input checked="" type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input checked="" type="checkbox"/> The Director is hereby authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. <u>50-0591</u> . This sheet is submitted in duplicate.</p> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"><div style="width: 60%;"> _____ Jeffrey S. Bergman Attorney Reg. No. : <u>45,925</u> OSHA · LIANG LLP 1221 McKinney St., Suite 2800 Houston, Texas 77010 (713) 228-8600</div><div style="width: 35%; text-align: right;"><p>Dated: <u>April 7, 2006</u></p></div></div>			



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Carl M. Hoffmaster  
Serial No.: 10/774,134  
Filed : February 6, 2004  
Title : Advanced Expandable Reaming Tool

Art Unit : 3672  
Examiner : Hoang C. Dang

Assistant Commissioner for Patents  
Mail Stop Appeal Brief-Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. § 41.41**

Dear Sir:

Pursuant to 37 C.F.R. § 41.41, please consider the following Appellant's Reply Brief  
in the referenced Application currently before the Board of Patent Appeals and Interferences.

The present Reply Brief is in response to the Examiner's Answer dated February 7, 2006.

## TABLE OF CONTENTS

I. Real Party in Interest .....	3
II. Related Appeals and Interferences .....	3
III. Status of Claims .....	3
IV. Status of Amendments .....	3
V. Summary of Claimed Subject Matter .....	3
VI. Grounds of Rejection to be Reviewed on Appeal .....	3
VII. Response to Examiner's Argument .....	4
A. The Pad-Blade-Cutter Limitations .....	4
C. The Ream While Drilling Limitation .....	6
VIII. Conclusion .....	8
Claims Appendix .....	10
Evidence Appendix .....	13
Related Proceedings Appendix .....	14

## TABLE OF AUTHORITIES

### CASES

<i>Brown v. 3M</i> , 265 F.3d 1349, 1351 (Fed. Cir. 2001) .....	4, 8
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303, 1321 (Fed. Cir. 2005) .....	6, 7

**I. Real Party in Interest**

The statement regarding the Real Party in Interest in the Appellant's Brief filed November 17, 2005 ("the Brief of Appellant") remains valid.

**II. Related Appeals and Interferences**

To the best knowledge of the Appellant and the Appellant's legal representative, there are no further appeals or interferences in addition to that reported in the Brief of Appellant that will directly affect, be affected by, or have a bearing on the decision of the Board in the pending appeal. Furthermore, to the best of knowledge of the Appellant and the Appellant's legal representative, there has been no decision in the earlier-reported appeal.

**III. Status of Claims**

The statement regarding the Status of Claims in the Brief of Appellant remains valid.

**IV. Status of Amendments**

The statement regarding the Status of Amendments in the Brief of Appellant remains valid.

**V. Summary of Claimed Subject Matter**

The Summary of Claimed Subject Matter in the Brief of Appellant remains unchanged.

**VI. Grounds of Rejection to be Reviewed on Appeal**

The Grounds of Rejection to be Reviewed on Appeal in the Brief of Appellant remain unchanged.

## VII. Response to Examiner's Argument

The Applicant respectfully maintains the positions outlined in the Brief of Appellant. Nonetheless, the Applicant respectfully replies to the Examiner's Answer of February 7, 2006 as follows.

### A. *The Pad-Blade-Cutter Limitations*

In the Brief of Appellant, the Applicant traversed the Examiner's rejection under 35 U.S.C. §102 on the basis that the Hailey '374 Patent cited by the Examiner does not contain each and every limitation as recited *and arranged* in claims 201 of the present Application. Particularly, the Hailey '374 Patent does not disclose: (a) at least two reamer pads operatively coupled to a tool body and adapted to be displaced between a retracted position and an expanded position; (b) at least one blade formed on each of the at least two reamer pads; and (c) a plurality of cutting elements disposed on the blades.

In answering, the Examiner contended that the Hailey '374 patent discloses all three limitations, (a), (b), and (c). Particularly, the Examiner alleged cutting blades **24a**, and **24b** are analogous to the at least two reamer pads (a), hardened insert **30** is analogous to the at least one blade (b), and the overlay of thermally stable polycrystalline diamond **55** is analogous to the plurality of cutting elements (c). However, the Federal circuit has held that:

"Anticipation under 35 U.S.C. § 102 means lack of novelty, and is a question of fact. To anticipate, *every* element and limitation of the claimed invention *must* be found in a *single* prior art reference, *arranged as in the claim*."

*Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001) (emphasis added). Therefore, in response, the Applicant respectfully asserts the structure identified by the Examiner is not analogous to the

limitations of claim 201 and, in the alternative, the allegedly analogous structure is not *arranged as in* claim 201. *See Id.*

Particularly, the Hailey '374 patent states that hardened insert **30** "is formed as in insert having an upper, wider portion **50** that tapers to a narrower lower portion **52** while defining a *continuous outer surface 54*." (Hailey '374, column 2, ll. 33-35) (emphasis added). Thus, it is clear from Hailey '374 that while hardened insert **30** may be considered analogous to the "at least one blade" of claim 201, the outer periphery thereof is a single continuous outer surface and therefore not a "plurality of cutting elements" as alleged by the Examiner. Furthermore, item **55** is explicitly identified in the Hailey '374 patent as an "overlay of thermally stable polycrystalline diamond (TSP)," not as a plurality of cutting elements as suggested by the Examiner. Therefore, the application of a hardened coating (*i.e.*, **55**) to a continuous outer surface (*i.e.*, **54**), does not change that surface into a "plurality of cutting elements" as required by claim 201.

Furthermore, even if the Board accepts the Examiner's contention that the "protruded portions defined between adjacent grooves or recesses" about the periphery of hardened insert **30** constitute a "plurality of cutting elements" as recited in claim 201, the Board should still allow the claim as the Hailey '374 patent does not disclose all the limitations *as arranged* in the claim. Particularly, claim 201 requires the plurality of cutting elements to be "*disposed on* the at least one blade." (Application, claim 201, line 5) (emphasis added). As construed by the Examiner, the plurality of "cutting elements" (*i.e.*, the protruded portions defined between adjacent grooves or recesses) of Hailey '374 are the blades themselves and are not disposed thereupon as required by claim 201. As such, the Hailey '374 patent fails to teach each and element of rejected claim 201 as arranged therein.

***C. The Ream While Drilling Limitation***

In the Brief of Appellant, the Applicant further traversed the Examiner's rejection under 35 U.S.C. §102 on the basis that the Hailey '374 Patent does not contain the ream-while-drilling limitation of claim 201. Particularly, claim 201 states that "the expandable reaming tool is configured to ream while drilling." (Application, claim 201, line 9). As such, the Hailey '374 patent fails to disclose what one of ordinary skill in the art of petroleum drilling technology would consider to be a reamer, thereby preventing the device disclosed therein from performing a reaming-while-drilling operation.

In answering, the Examiner provided a dictionary definition of the term "reamer" in support of a contention that the Hailey '374 patent discloses a reamer. Particularly, the Examiner cited the Merriam-Webster Online dictionary (<http://www.webster.com>) as defining a reamer to be "one that reams: as a rotating finishing tool with cutting edges used to enlarge or shape a hole." In response, the Applicant respectfully asserts that the cited definition is incomplete for the term "reamer" as used in the present Application and thus deviates from what one of ordinary skill in the art of oilfield drilling would consider to be a reamer.

In Response, Applicant respectfully asserts that the definition proffered by the Examiner to define the term "reamer" is inappropriate. In *Phillips*, the Federal Circuit, held that the "'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent" and not necessarily a dictionary definition. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005). The Court warned that the use of a dictionary definition can conflict with the inventor's description of what was invented as the applicant does not create the dictionary to define the invention. *Id.* Additionally, according to the Federal Circuit, dictionaries provide an expansive array of definitions for particular terms and there is no guarantee a term will be used

in a treatise in the same way as would be by the applicant. *Id.* at 1322. Therefore, a claim should not rise or fall based upon the preferences of a particular dictionary editor as they may simplify ideas to communicate them most effectively and may thus choose a meaning that is not pertinent to the understanding of the claim language. *Id.*

As used in typical oilfield drilling parlance, a reamer is a device that is run at the end of a drillstring and used to open an under gauge bore to full gauge as it is engaged therethrough. Therefore, it follows that, in a reaming-while-drilling operation, a pilot bit and a reamer are run together at a distal end of a drillstring to contemporaneously drill and open a pilot bore to a desired “gauge” bore. Furthermore, as it is understood by those of ordinary skill in the art, the pilot bit is only capable of drilling the formation when the drilling assembly is thrust downward into the bore. Thus, a reamer running with a pilot bit is only capable of reaming-while-drilling when the drillstring is proceeding further into the formation.

While the device disclosed in the Hailey ‘374 may be considered a reamer under certain dictionary definitions, it is nonetheless not capable of reaming-while-drilling as required by claim 201. Particularly, the cutting structure of blades 24 is such that the hardfaced inserts 30 will not be in contact with a leading portion of a pilot bore if run behind a pilot bit. As described in the Hailey ‘374 patent, lower points 38, those that would first contact the pilot bore in an underreaming operation, are not hardfaced and therefore would not be used by one of ordinary skill in the art as reaming cutting surfaces.

Furthermore, the Hailey patent consistently refers to the invention disclosed therein as a “clean-out tool cutting blade.” The patent title, the background, the summary, and the detailed description of the invention all refer to the device disclosed therein as a clean-out tool. As described in the Hailey patent, the expandable cutting tool disclosed therein is designed to be



“rugged and reliable for use in selected tubing clean-out applications.” (Hailey ‘374, column 1, ll. 35–36.) Nowhere within the four corners of the Hailey ‘374 patent is it stated, either implicitly or explicitly, that the apparatus disclosed therein is capable of reaming while drilling.

In responding, the Examiner calls attention to language in the Hailey ‘374 patent stating that blades disclosed therein are capable of being used with the tool disclosed in the earlier Hailey ‘793 patent. In response, the Applicant respectfully asserts that while the blades of the Hailey ‘374 patent may be used in conjunction with the tool of Hailey ‘793, the blades of Hailey ‘374 are *not* usable in conjunction with the tool of Hailey ‘793 to perform a reaming while drilling operation as required by claim 201. The aforementioned limitations of the cutting structure of blades 24 would prevent such use.

### **VIII. Conclusion**

For the reasons presented above, claims 201-204, 206, 207, 210-212, 217 and 218 of the ‘134 Application are patentable over the cited art, as neither Hailey ‘374, Hailey ‘793, nor any combination thereof discloses all of the limitations recited therein. *See Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001). Therefore, the Appellant respectfully requests that the Board reverse the Examiner’s rejections and allow all pending claims 201-204, 206, 207, 210-212, 217 and 218 of the ‘134 Application.

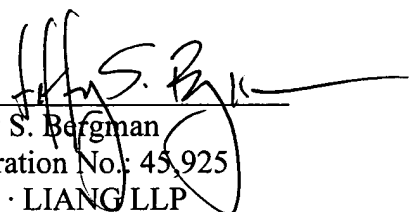
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(Reference No. 05516/089003).

Date: April 7, 2006

Respectfully submitted,

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## **Claims Appendix**

### **Claims of Record in the Application**

201. An expandable reaming tool, comprising:  
at least two reamer pads operatively coupled to a tool body and configured to be displaced between a retracted position and an expanded position;  
at least one blade formed on at least one of the at least two reamer pads;  
a plurality of cutting elements disposed on the at least one blade,  
wherein the plurality of cutting elements are arranged so as to substantially balance at least one parameter selected from axial force, lateral force, work, and mass between the at least two reamer pads,  
wherein the expandable reaming tool is configured to ream while drilling.
202. The expandable reaming tool of claim 201, wherein the plurality of cutting elements comprise at least one of polycrystalline diamond inserts, tungsten carbide inserts, and boron nitride inserts.
203. The expandable reaming tool of claim 201, further comprising at least one gage protection element disposed on a gage surface of the at least one blade.
204. The expandable reaming tool of claim 203, wherein the at least one gage protection element comprises at least one of a thermally stabilized polycrystalline insert and a polycrystalline diamond insert.
205. The expandable reaming tool of claim 201, further comprising a vibration damping insert disposed on the at least one blade.
206. The expandable reaming tool of claim 201, wherein the at least two reamer pads and the plurality of cutting elements are arranged to backream a formation in a wellbore.
207. The expandable reaming tool of claim 201, wherein the plurality of cutting elements are arranged to form a tapered cutting structure.

208. The expandable reaming tool of claim 201, wherein the plurality of cutting elements have backrake angles of greater than 20 degrees.

209. The expandable reaming tool of claim 201, wherein selected ones of the plurality of cutting elements have different backrake angles than other ones of the plurality of cutting elements.

210. The expandable reaming tool of claim 201, wherein each of the plurality of cutting elements has a diameter of less than 13.0 mm or greater than 13.0 mm.

211. The expandable reaming tool of claim 201, wherein selected ones of the plurality of cutting elements disposed on one of the at least two reamer pads are positioned so as to form a redundant cutting arrangement with other selected ones of the plurality of cutting elements disposed on a different one of the at least two reamer pads.

212. The expandable reaming tool of claim 201, wherein the at least two reamer pads and the plurality of cutting elements are configured to substantially mass balance the expandable reaming tool about an axis of rotation of the reaming tool.

213. The expandable reaming tool of claim 201, wherein the at least two reamer pads and the at least one blade are formed from a non-magnetic material.

214. The expandable reaming tool of claim 201, wherein the at least two reamer pads and the at least one blade are formed from a matrix material infiltrated with a binder alloy.

215. The expandable reaming tool of claim 201, wherein surfaces of the at least one blade proximate the plurality of cutting elements are shaped so that a cutting element exposure is equal to at least half of a diameter of the cutting element.

216. The expandable reaming tool of claim 201, wherein a perpendicular distance measured from a surface of the at least two reamer pads to an outermost extent of a gage cutting element disposed on the at least one blade is equal to at least twice a diameter of the gage cutting element.

217. The expandable reaming tool of claim 201, wherein a gage surface of the at least one blade comprises a hardfacing material.

218. The expandable reaming tool of claim 201, wherein a gage surface of the at least one blade is formed from a diamond impregnated material.

## **Evidence Appendix**

Not applicable to the present Appeal.

### **Related Proceedings Appendix**

No decisions by any Court or the Board have been rendered as of the time of this filing.